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Outgoing

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**From:** Steve Christensen  
**To:** Dave Shaver; Kevin Lundmark; OGMCOAL  
**Date:** 11/24/2009 5:43 PM  
**Subject:** Crandall Canyon-Mine: Mine-Water Discharge Water Quality Data  
**Place:** OGMCOAL

Dave,

Per our phone conversation earlier today, here is an additional deficiency to tack on to your already extensive list:

**R645-301-731.200:** The Permittee must provide a commitment to obtain additional water quality data. In order to evaluate the performance of the proposed water treatment facility, additional water quality information is necessary. The additional data is further needed in order to facilitate the design of a final reclamation plan that will include perpetual treatment of the mine-water discharge.

Analytical parameters should include the following, at a minimum:

Iron (total, dissolved, and ferrous)

Manganese (total and dissolved)

Aluminum (total and dissolved)

Alkalinity

Sulfate

pH

Dissolved Oxygen

Samples and field measurements should be collected at two locations: 1) from the 12-inch HDPE pipeline prior to the Maelstrom unit inlet, and 2) at the UPDES sampling point at the outlet of the settling basin. The pre-Maelstrom unit sampling point should be depicted on Figure 1 of 5 of Appendix 7-65. Monitoring frequency should be monthly, and may be performed in conjunction with the ongoing monthly UPDES sampling activities. Monitoring results should be provided to the Division monthly via email. At this time, these monitoring requirements need only be specified in the Mine Discharge Water Treatment Facility details (Appendix 7-65). If ongoing monitoring associated with the iron treatment system is required in the revised final reclamation plan, then the text, tables, and figures of the plan will require modification, as appropriate.

Please don't hesitate to contact myself at (801)538-5352 or Steve Christensen at (801) 538-5350 with any questions about this request.

Thanks,  
Kevin

Kevin Lundmark  
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